THE

REGISTER OF PENNSYLVANIA.

DEVOTED TO THE PRESERVATION OF EVERY KIND OF USEFUL INFORMATION RESPECTING THE STATE.

EDITED BY SAMUEL HAZARD, NO. 51, FILBERT STREET.

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CANAL DOCUMENTS.

West Branch and Allegheny.

No. 2.

INSTRUCTIONS TO MESSRS. WILSON AND MITCHELL.

Philadelphia, May 15, 1827.

Messrs. William Wilson and John Mitchell,

Gentlemen,—In compliance with a written application to the canal commissioners, a copy of which is hereto annexed, you have been appointed to make further examinations in order to ascertain the practicability of a continued water communication between the Allegheny and Susquehanna rivers. It is the wish of the commissioners that this request may be gratified to the utmost possible extent, and that no means of determining so interesting a question may be left untried.

For the complete accomplishment of this object, examinations will be necessary on the east and Bennett's branches of Sinnemahoning, and along the whole dividing ridge, commencing at the head of the latter stream, and extending in a southerly and southwesterly direction to the heads of Blacklick, a branch of Connemaugh. As this embraces a wide extent of country, abounding with difficulties, and where the progress of the surveyor must necessarily be retarded, it is desirable that some arrangement may be made between you, which will ensure the utmost expedition and prevent interference one with the other. It is proposed, therefore, that you meet as early as possible, and divide the country to be examined equally between you. Having done this, you will each organise a party of the same strength as have heretofore been employed for similar purposes, and proceed to the active execution of the duty assigned you.

It would be difficult for the board, with their imperfect knowledge of the country, to define with precision the points to be examined, and they are disposed rather to leave you a general authority, to examine every point where the waters of the two great rivers approach each other, which you may suppose to afford a reasonable prospect of success, or which are thought to do so by the people of that country. These examinations, however, will be confined to the single object of ascertaining the possibility of a water communication across the dividing ridge, and the course of proceeding will be as follows:

Having ascertained the summit between any two waters which appears most favorable, you will proceed to ascertain the quantity of water on that level, by measurements, such as you have formerly made. If the quantity appears sufficient to warrant any further inquiry, you will then proceed to ascertain by actual survey, the practicability of introducing it upon the summit proposed, through a feeder—the length of such feeder; the facility with which it may be made, the quality of the soil through which it passes; and all other particulars which tend to elucidate the main subject of inquiry. It is left optional with you either to commence your line of levels at some known point already examined and continue it without intermission through the rest of your examinations, or to assume new points more convenient, from which to begin your calculations. You will remember however that if any summit appears to you favorable for a water communication, it must be so connected with some point already known, as to enable you to ascertain its positive elevation above tide-water.

Wherever it is possible to obtain information from the inhabitants of the neighborhood, you will take care to do so, and you will omit no examinations or inquiry calculated to satisfy their minds, or test the accuracy of their opinions. It is wished also that general invitations may be extended to the most respectable and intelligent citizens, to be present at the surveys in which they feel an interest. You will keep accurate notes of all your proceedings, and as soon as possible, after your return, will report them in detail to the board, accompanied by proper drafts and maps of the country explored.

In the written application, of which a copy is furnished you, it is proposed that in the course of the season, a competent engineer may be sent to review the surveys and furnish his opinion as to the practicability of any routes which you may have fixed upon. With this proposition, the board will make every effort to comply. In order to enable them so to do, you are requested, at least once in two weeks, to apprize me of your situation and prospects, and of the point at which you may most conveniently be reached by letter or otherwise. Towards the latter end of August when the waters are lowest, is the time at which an engineer will probably be despatched. It is hoped that by that time you will have collected the necessary materials for a professional opinion.

Your obedient servant,

Signed; JOSEPH M'ILVAINE.

No. 3.

William Wilson's Report.

Jos. M'Ilvaine, Secretary of the Board of Canal Commissioners of Pennsylvania.

Sir—Your instructions of the sixth of June were received on the eleventh, and on the same day I proceeded with a party of hands, provisions, &c. to the portage summit to the Sinnemahoning, and Allegheny river. We commenced our operations on the 18th and descended on the Sinnemahoning side of the ridge 103 feet in a distance of 177 perches. Returned to the summit and descended 102 feet on the Allegheny side in a distance of 179 perches. Having thus ascertained the form of the top of the ridge separating those streams, assumed a level 100 feet below its summit as the most suitable experimental elevation, and continued rounding the different streams and hills which intervened betwixt that and the mouth of the portage.

The reason which induced the adoption of this course was, that should any depression in the ridge, permit us to pass it, the distance to the Allegheny would be much shortened and we would then adapt our level of the feeder to such pass, either by elevating or depressing it; but no such opening presenting, we continued our level to the rounding near its mouth found the distance 21 and one-fourth miles and the depression to the surface of a mill pond at the confluence of the portage and Allegheny to be 334.58 feet. We then continued our level up the Allegheny to ascertain at what point its waters would be available upon the summit, the distance by the valley was 22¼ miles (terminating about five miles above Couders port) to which may fairly be added 18

miles for the rounding of hills, streams, &c. presenting an aggregate of 61½ miles, viz: 21¼ on the portage and 40¼ along the river. It was suggested, that a more practicable route might exist betwixt the heads of the first of the Sinnemahoning and Allegheny. This seemed plausible, as the heads of that stream make a nearer approach to the main river, than any other east of the mountain, being about 2½ miles. We went to what was considered the lowest place in the ridge, decended 516.45 feet in a distance of 678 perches; three-fourths of a mile still remained to the river, and the stream we were descending falling rapidly, we were fully convinced, that the fall could not be less than 600 feet, therefore considered it totally impracticable, as no supply of water could be available at so high a level, or any reasonable depression which might be made, either by a deep cut or tunnel.

The succession of wet weather which preceded the completion of our survey upon the Allegheny, rendered a guage of its available waters totally impracticable; but judging from the size of the different streams, at the places which our level would cross them, the length of feeder necessary to conduct them to the summit and the declivity of the hills along which it would have to pass, I considered this route less favorable than the——

A day or two before we completed the survey of the Allegheny, a deputation called upon us, from some of the inhabitants of the Driftwood branch of Sinnemahoning, presenting a letter from an intelligent gentleman in that quarter, in which he suggests from the best information which he can obtain, that a route favorable for a canal existed betwixt the ——— of the Driftwood and Clarion river; we then proceeded to that place and viewed the summit, found the ascent on the Sinnemahoning side of the river to be great, the ridge wide and flat, and the streams which could be commanded, small. Under these circumstances, it was not considered necessary to use any level upon it, being fully satisfied, that a sufficiency of water could not be obtained at so high a level.

We then proceeded to the ridge dividing Bennet's branch of the Sinnemahoning from Sandy ——— carried a level a considerable distance along its top, and likewise along the different streams, skirting its base on both sides, so as to ascertain the form of the ridge and streams which have their sources in it. This induced us in the first instance to drop 165 feet on each side below its lowest summit; but a continuation of our level down Sandy ——— about eight miles, satisfied me, that sinking 22 feet lower, would be advantageous, as such additional depression would enable us to command Fall's creek, near its lower fork, which is bent about one and three fourth miles from its mouth, and three-fourths of a mile above saw mill.

From a view of the face of the country around this summit and its streams, as delineated by our levellings, I beg leave to suggest what would appear to me the best mode for its improvement.

A tunnel through the ridge of about 224 perches in length, a little more than 200 feet below its summit; although I do not think any shaft necessary for excavation would much exceed 100 feet. A cut in the Sinnemahoning side 40 feet at the end of the tunnel and terminating at the minimum depth of cutting in 200 perches. A cut on the Sandy side 35 feet at the end of the tunnel, and terminating at the minimum depth at 600 perches. A dam and embankment at Shaffer's 80 perches in length and 12 feet in height, forming a reservoir which will cover about 250 acres, the surface to be four feet higher than the surface of the canal, making an extra embankment from the minimum depth to Shaffers.

Fall's creek feeder would be6¼ to 6½ m. in length, the ground generally good excepting the ends of two hills, which are steep, and three fourths of a mile next to Fall's creek, which is rocky. The feeder necessary to conduct the south-east branch at Luther's creek to the dam at Shaffers would be 1¾ to 1½ miles in length, the ground favourable and of gentle declivity; the rest of the streams betwixt the dam and the dividing ridge, come in above the level of the proposed canal.

Sandy ——— near the dividing ridge is a sluggish stream winding its serpentine course through extensive flats composed principally of clay, scarce a stone to be seen. Beaver dams are frequent, covered with grass, small bushes, or timber of small size; the remainder of the flats are heavily timbered with white pine, white oak brush, sugar, &c. The Sinnemahoning is favourable for canalling for about seven miles from the dividing ridge (excepting a heavy growth of timber) and may be continued on the north side, for that distance. Below that the hills are alternately washed by the stream and in several places present rocky and precipitous fronts, which may be avoided by eleven crossings. The cost of this section would about equal that above Coleman's on the Driftwood.

The dividing ridge is unusually free from stone upon its surface, covered with a growth of white pine, white oak, hickory, &c. composed of argillacious and ——— slate so far as the washes upon its side disclosed.

It was conjectured that an additional supply of water could be obtained from Anderson's creek, and a level was extended up Birch run and along the Kersey road, to what had been pointed out to Mr. Mitchell, two years ago, by the inhabitants of that quarter as the lowest place in the ridge, we found its elevation above the level of the proposed pass, to be 315.99 feet; this project was therefore abandoned, believing, that little if any, of the waters of Anderson's creek, could be found above its level in dry seasons. We then proceeded to little Toby and upon examination found, that four streams which have their sources in Bonne's mountain, (Elk mountain on the map) can be conveyed to the summit of Sandy, by the channel of Fall's creek.

From Bear to 14 mile run, is	3 m.	52 perch
to Whetstone	1	290
to Rattlesnake	7	190
to pass of divide to end of Fall's creek	1	198
In all	14	90

Should the experiment of supplying a summit by the application of steam power be found practicable, and that used to elevate the waters of the three first streams about 90 feet, the distance might be much lessened from Whetstone to Rattlesnake. From Bear to 14 miles run the ground is not very favourable, being intersected in several places by deep ravines, and from Whetstone to Rattlesnake, similar difficulties present themselves; as also, steep hill-sides, which do not show rocks upon their surface but their slopes indicate a rocky formation. Coal abounds on those waters, as also on Sandy and Sinnemahoning.

A succession of showers rendered impracticable a guage of the waters of Sandy, during the time we were employed upon it, and when we had descended Bennet's branch for some distance, I returned as far as the dividing ridge for that purpose but was prevented by a shower, and returned to levelling. The weather continued dry until we reached the junction of Bennet's and Driftwood branches. We found the distance from the proposed pass, to be 627.37 feet, wich is 179.68 feet lower than ——— creek and 1397.69 above tide water.

A guage having been prepared upon Smeaton's plan, J. J. Wallis, esq. returned with one of the hands to Sandy, and gives the following as the result of his measurement.

Summit creek 7 inches through and 12 in opening	89 p. min.
Fall's creek 8½ do.	115
Southeast or Luther's 5¾ do.	64
	268

I cannot say this measurement was taken at the low-

est state of the waters, but am authorised to say upon the authority of Mr. Wallis, that the waters were lower at the time the guage was taken than they had been at any time prior to it, this season.

The guages of the streams issuing from Boone's mountain, had been taken when we were employed upon Little Toby, and are as follows:

Rattlesnake	58 cubit ft. p. minute
14 miles	25
Whetstone	67
Bear run, say	58
	208
Deduct ½ equal to low water,	52
	156
Waters of Sandy	268
Total	424

From this it would appear that the streams of Toby would have to be conducted over the dividing ridge in such manner as to avoid leakage and evaporation, and that a similar plan would have to be pursued with Fall's creek feeder. That from the S. E. branch or Luther's branch, should be an open cut, emptying itself into the reservoir.

From a line of level which we ran round the ground which would be inundated by the reservoir, it cannot contain less than 250 acres, which I have reason to believe would be filled by those streams at the summit and Luther's creek.

From an assumed level we descended a small stream on the Sinnemahoning side for two and a half miles, (fall 127.69 feet) which is then joined by another of larger size from the south. On the Sandy side no additional supply of water of any consequence comes in for about three miles, at which place a stream nearly equal to S. E. branch enters the creek.

I do not know that any series of observations have been made upon the highlands which separate the eastern and western waters, but judging from the drainage, which is in reality but the difference betwixt the quantity of moisture which descends and that which ascends, induces a belief, that the descent of moisture is greater and the ascent less in high than low regions, and would ——— the difference in the weight of the atmosphere be likely to produce such an effect. I have endeavoured to communicate all the facts connected with each of the routes, upon which I have been employed, and the schemes upon which the examinations have been founded, as no survey of a summit can be made, unless the person employed has some plan; as to practicability that is not for me to determine.

I am gentlemen, very respectfully, your obedient servant,

WM. WILSON.

N. B. From the best information I could obtain, the distance from the West branch, at the mouth of Sinnemahoning to Allegheny at the mouth of Sandy, is about 100 miles.

Adding our distances from the end of the tunnel, to the mouth of Bennet's branch, produces	40 miles	56¼
Add to, mouth of Sinnemahoning, about	15	
	55	56¼

No. 4.

To the Pennsylvania Canal Commissioners.

Gentlemen,—In pursuance of your joint instructions to William Wilson and myself, dated the 6th of June last, directing further explorations of the Sinnemahoning and of the West Branch of Susquehanna, I proceeded to the Susquehanna, it being the part allotted to me by a private arrangement with Wm. Wilson. My first effort was to ascertain the wishes of the citizens of Clearfield county, as to any particular pass they might desire to have explored with a view to a connection of the eastern and western waters. Their consultations on this subject resulted in giving me no positive directions as to any particular point in that county, but requested that a correct examination might be made from my former summit between the Cushing and Two-lick. Immediately on my arrival at this summit, I dispatched a messenger to the town of Indianna, requesting the citizens of that county to meet me at the summit as early as possible, with a view of instructing as to the plan they might wish me to pursue in relation to the object for which I had been appointed. They promptly attended and their views corresponding with my own, we determined on the following plan. First. That my survey should be made with a view to iron pipes, to convey the water to the summit level. Second. That I should proceed from the summit to the Black Licks, and also ascertain the practicability of bringing in the Conemaugh; and Third. To carry my levelling to the Chest and Big Mahoning creeks. In the execution of this plan, the following are the results.

I first ascertained the practicability of passing the Mahoning over the divide necessary to be passed, to bring it to the summit. This was effected by a cut of 12.67 feet in the centre, terminating at the surface, both ways; whole distance 55 perches; and which is represented on my draft at the connexion of the Cushing and Little Mahoning. I then proceeded from the summit towards the Black Lick, carefully preserving the height of my summit and examining every pass on the intervening divides, that presented a prospect of shortening the distance between the two extreme points. A view of my draft will shew that in this, I was not very successful, as my route turned out to be a very circuitous one. In my passage from the waters of Brush creek to that of the Laurel run, and for the purpose of saving in distance, I have presented a cut of seventy-one feet in the centre, terminating both ways at the surface,—the bare line as represented on the profile, is eighty perches. This perhaps could be more advantageously effected by a tunnel, in part the ground is entirely clear, and soil of slate; from here I passed down the Laurel run, to the white oak marked at Black Lick, being then three hundred and fifteen feet 10-100ths below the summit. The distance saved by the above cut is between three and four miles. From the white oak, I continued my levelling a distance of two miles and one hundred and five perches, to a benched cherry on the divide, between Black Lick and the Conemaugh river, at the east end of the town of Armaugh; this bench is seventy-eight feet 68-100 below the summit. From here I returned to the white oak at Black Lick, and continued my levelling up that stream a distance of ten miles and two hundred and fifty-four perches, to a benched Buttonwood at the mouth of the Beaula branch, being two hundred and thirty feet 17-100 below the summit. From thence up the Beaula Branch, a distance of four miles and one hundred and fifty-three perches to a benched birch, on the west side of the creek being the height of the summit. Returned to the buttonwood and proceeded up the north branch a distance of four miles and thirty-four perches, to a benched sugar tree at the mouth of the Elk branch, being 54 feet below the summit; continued up the north branch one mile 174 perches, and benched on a birch tree the height of the summit; returned to the sugar bench at the Elk branch, and ascended the same one mile and thirty-four perches, benched on a birch, being the height of the summit. These waters were so much swollen by the late rains, as to prevent, at this time, any correct measurement being taken; I therefore determined on returning for that purpose. From here I directed my course to the Chest creek, and commenced my levelling on that stream, at my former bench made in 1825; being one hundred and fifty-three feet 71-100ths, above the summit; from this bench I continued down the creek eight miles and two hundred and sixty-five perches, and benched on a hemlock, being the height of the summit.

This bench is four hundred and ninety-six perches below Elder's mill, on Chest creek. At this place I measured the water, the result of which will hereafter be given. It will be proper here to observe, that this measurement was taken when Litsenger's mill, which is near seven miles higher up on this stream, was stopped; the dam of which at that time, would contain the water above for at least sixty days;—the difference in depth of water when the mill was going, was at the place of measurement observed to be two and a half inches, so that this measurement will be increased in quantity of water when the stream is permitted to flow regularly.

From here I returned to the summit and commenced a level line towards the Big Mahoning. The country laying immediately between the summit and that part of the creek at which it is necessary to take out the water, being an entire wilderness without roads, and presenting much difficulty in transporting the necessary supplies for my party, induced me to take the circuitous route, as represented by the level line on my draft, for the advantage of a road. I however travelled over the country with a view of ascertaining its locality, and am of the opinion, that the divide necessary to be passed between Little Mahoning and Canoe creek, cannot be passed at a point nearer the direct course, than that represented on the draft by a benched white oak on the divide, being the height of the summit. I continued my level to Hoover's mill on Big Mahoning, a small distance below Puxatawney; from here I pursued the creek to a short distance above the mouth of Canoe creek, finding that above this; I would have much difficulty in pursuing the creek, owing to the frequent stoppages by drift and beds of laurel surrounding the stream and knowing from my former survey nearly the point at which I must arrive, I left the stream and pursued the course represented by the level line on my draft, until I arrived at the height of the summit, on the east branch of said creek, at which place I found the water so trifling as not to be worth measuring. Having thus ascertained all the facts relating to water that can be brought in aid of this summit, I with my party returned home.

The measurement of Chest creek resulted as follows:

Breadth of Come,	18 inches.
Heighth of do.	10 6-10.

Producing as I have calculated it, two hundred and forty-eight cubic feet per minute. Estimating the three branches of Black Lick, to produce double that quantity; a supposition which I am inclined to think is not too great. My opinion, however, on this subject is founded; 1st from the appearance of the streams at the junction of the North and Beaula branches, before the rains had fallen, that afterwards raised the waters; and 2d from arriving at the height of the summit on the Beaula branch, the evening before the rain commenced, the streams at that time were thought to be at their lowest stage. This was on Saturday evening; when I returned on Monday morning, they had rose upwards of two feet. Upon this supposition, the sum total of the water produced by the Black Licks and the Chest, will be seven hundred and forty-four cubic feet per minute, and would fill a Lock of ten feet lift, eighty by nine feet, six times in an hour.

The measurement of the Susquehanna branches, which you have in my report of 1825, are so small, that perhaps they are not worth taking into the calculation especially when we consider the expense at which they are to be got. I would here observe, that about the first of November, I returned to the Black Lick, in company with Mr. Whippo, the engineer detailed by the board for the examination of that route, and *again* found the streams too high to admit of a correct measurement. I am therefore compelled to relinquish all hope of being able this season to give any further estimate of these waters.

I would further observe that an increase of water could be obtained, by erecting dams in the different streams where the water is taken out. I would say that on Chest creek, a dam of fifteen feet in height, would but little exceed twelve perches in length, and would back the water eleven hundred and eighty-eight feet, the mean breadth of dam, one hundred and forty-eight feet, the mean depth, seven and a half feet, and would contain 1,318,680 cub.ft.

Beaula branch of Black-lick, the same	1,318,680
Elk of do.	1,318,680
North of do. with a dam of the same height will contain	1,978 020
	5,934,060

Giving eight hundred and twenty-four lock fulls, in addition to the before mentioned quantity of water. The summit level may be sunk forty-eight feet in the centre, terminating at the surface each way at one hundred and fifty perches; by giving the excavation for the reservoir a direction best suited to the ground, it can at a reasonable expense be extended to any size that may be deemed necessary.

I am aware that objections may be made to the size of the proposed lock. I merely suggest the propriety of building locks, that will afford the greatest advantages to be had from a certan limited quantity of water, and leave you to judge whether or not this quantity under any circumstances will warrant the improvement.

No actual location of a canal has been made from this summit, to enable me to give a correct statement, as to the distance at which an additional supply of water could be had. At the junction of the Susquehanna and the Cushing, on the east side, and distant about four miles from the summit, with a lockage of two hundred and fifty-seven feet, a small supply can be had, say at the lowest stage of water, about one hundred and fifty cubic feet per minute. On the west side about three miles from the summit, with a little more than a hundred and fifty feet lockage to below the forks of Two-lick, will afford about the same quantity. Those streams last mentioned, three months out of the eight that the canal would be navigable in the year, would of themselves be sufficient to supply a canal.

Upon this system of pipeing it may be proper to observe that there are in many places, convenient to the line, the appearance of an abundance of iron ore, with convenient streams sufficient for blast furnaces. From this circumstance I have no doubt but contracts for the delivery of iron pipes could be had at a very low price. I would estimate the cost of pipes at one dollar and fifty cents per foot when laid, which would be seven thousand nine hundred and twenty dollars per mile.

The length of Feeder Pipes necessary.

Chest creek feeder	34 miles	
Black Lick up the north branch	31	
Beaula branch	4	153 perch
Elk branch	1	34
Whole distance	70	187

Making the whole expense of pipes five hundred and fifty-nine thousand and seventy two dollars. Would not this be less expense than a tunnel of two miles? If then there should be water sufficient, the question arises, to what expense will we go to effect an entire water communication. If there should not be water sufficient, the next stream we turn our attention to, is the Conemaugh; the distance from where this feeder would unite with the present proposed line of pipes, and near the marked white oak on Black Lick, to a place on the Conemaugh, called the Cedar Rock, is four miles, and one hundred and five perches; from that rock to the place necessary and proper to take out the water, the distance can be ascertained from the levels and surveys already made on that stream; say from the connected map made by Mr. Strickland in 1825. I will here observe that if

the depression from the summit line, as given in my profile, should be considered too great, requiring too much strength of pipe, there will be no difficulty other than increase of distance in lessening it.

From the general character of the topography of this part of our country, in which two of our greatest rivers have their sources, the mind is at once satisfied that we have in Pennsylvania the most elevated ground perhaps in the United States, to contend with; and the circumstance of the west branch of the Susquehanna passing through the great barrier and rising not only west of the Allegheny mountain, but the Laurel Hill and Chesnut Ridge, points out to us the only route by which we can effect a water communication to connect those rivers. In this elevated part of our country, in which numerous streams have their source, they must necessarily be small and their descent rapid, each presenting a deep ravine. This being the fact, presents great difficulties in bringing to any one point on the divide, a sufficiency of water to effect an object in view. Having for many years had an opportunity of forming a correct judgment in relation to this fact, I hesitate not to say that unless the system of pipeing is adopted, no summit on that divide will ever in Pennsylvania be supplied with water sufficient to warrant an improvement of so much expense, and if iron pipes are adopted to the extent that is practicable. I hesitate not to say that a perfect and complete water communication can be obtained.

The Cushing summit, and a small space of country around it, is evidently the lowest we have in Pennsylvania without a tunnel. The canal from this summit will pass westwardly down the Two Lick and Black Lick, and intersect the canal at the junction of the latter with the Conemaugh, two miles below where the law now terminates on that stream; how far the interference of these two improvements might make for or against the best interests of the state, I am at present not prepared to say. But for the sake of having one entire water communication; I will suggest the propriety of extending the rail road necessary to connect with the Juniata to a point at or near the junction of Black Lick and Conemaugh.

Feeling an interest as great as any other man in the prosperity of our country, and being sensible of the fact, that to promote that object, much depends on a well regulated system of internal improvement by canals, yet at this time I feel it my duty to state, that without the adoption of iron pipes, any further explorations with a view to a connection of the eastern and western waters, must result in fruitless expense.

The object of this survey being mainly to ascertain the practicability of supplying a summit level with water, and I having adopted iron pipes to effect that object, precludes the necessity of my making any particular observations as to timber, soil or materials for the construction of works. The pipes only requiring an excavation of two and a half or three feet.

All of which is respectfully submited.

Signed, J. MITCHELL.

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No. 5.

Additional Report from John Mitchell, esq.

Washington, 4th Dec. 1827.

Dear Sir,—Since the delivery of my report to the Canal Commissioners, from reflecting on the subject of iron pipes, I am induced to believe that I may have made the estimate of expense too low. The only data I had, upon which to found my estimate, was the cost of a ten inch pipe made in Baltimore, the expense of which is there, one dollar and ninety-five cents per foot; my estimate was made in part, upon the ground that this pipe was furnished by an air furnace, and made from pig; and part from my own knowledge and experience in the manufacturing of this kind of metal from the ore. A sufficient quantity of pig metal to make a ton of pipes, will in Baltimore, cost not less than forty dollars, where a sufficient quantity of bog-ore used in a blast furnace, constructed at the proposed banks near the line of pipes to make the same weight of metal, will not cost more than seven dollars and fifty cents; upon this hypothesis, I presumed the price stated might have been sufficient; but reflecting that the Baltimore pipe is perhaps not of sufficient size, strength or weight to furnish the mean weight of that which in this case would be necessary; I am induced to make this further communication on that subject.

The Baltimore pipe weighs twenty-four pounds to the foot, $1 50, is $40 50 per ton. Judge M'Kinney of Centre county, under a contract with the government, has delivered at this place (Washington) three hundred tons of Kentlege, at forty dollars per ton, and with a reasonable profit to himself; this Kentlege is also flasked, where cast; I am aware that the pipe is more expensive to cast than the Kentlege, but the difference does not exist in furnishing the metal, but mainly in the charge of the moulder, this difference is put against the carriage of the Kentlege over two hundred miles, and the profit to the manufacturer; I would further observe, that upon the principle that the state will under the direction of salary managers, erect the furnaces, the advantages arising from the contiguity of materials, as also from the low price of labor and provisions in the western country the article can be furnished at a price vastly below any estimates that may consistently be drawn from the Baltimore and Philadelphia prices.

As this subject of pipeing is new, and we cannot from actual experience in this particular case, be furnished with any correct data, upon which to make our calculations, either as to the cost, or even size of the article, I therefore hope that any difference of opinion which may arise on this subject, will not be considered on either side, as marks of favour, or hostility to the measure.

I would respectfully draw the attention of the Engineer Mr. Whippo, to the subject, as relates to the size of the pipe necessary to carry the water measured in Chest creek, as also the difference between the quantity of water vented through a close pipe, and that through an open trunk of the same capacity, allowing the same descent in both cases.

I have to request the favour of you, to have the above added to my report when published.

I have the honour to be respectfully,

Your most obedient servant,

JOHN MITCHELL.

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No. 6.

Having performed the second duty assigned me, I proceeded to the third, of which the following detailed instructions from Mr. M'Ilvaine will give a full and perfect view.

Sir,

By an act of the last session of our legislature, the Canal Commissioners were directed "to cause further examinations to be made with a view of ascertaining the practicability and cost, of an entire navigable communication, between the Susquehanna and Allegheny rivers."

Shortly after the law was passed, several gentlemen of the legislature, who felt themselves particularly interested, addressed a letter to the board, in which they suggested the mode of prosecuting these inquiries, which seemed to them most economical and effective. In compliance with such suggestion, Messrs. Wm. Wilson and John Mitchell were dispatched with a competent party and with instructions to examine every possible point of connection between the eastern and western waters, which had not been previously explored. These instructions have been faithfully executed, and it only remains, in order to complete the plan adopted, that a professional engineer of known skill and experience, shall view the summits which the examinations already made have shown to be the most favourable, and report to the board his opinion on the subject.

The commissioners having assigned to you this interesting duty, you will proceed with Messrs. Wilson and Mitchell as early as possible, to the several points which they shall represent to be worthy of your attention. These points are as I understand but two in number, namely; one surveyed by Mr. Wilson, at the head of Bennet's branch, and the other by Mr. Mitchell, near the head of the west branch of the Susquehanna. It is believed that these gentlemen have taken the levels and made the measurements of water with such care as that after viewing the ground you may safely rely upon their notes as the basis of your opinion. If however you find any thing of importance has been omitted, you will cause the deficiency to be supplied by additional examinations, with the least possible delay.

The single question submitted to you for decision is, whether at either of the points which you are about to visit, a permanent navigable communication, sufficiently supplied with water to answer the purposes of an active and valuable trade, be practicable or not. So far as the previous examinations, and the local knowledge of Messrs. Wilson and Mitchell, throw light upon this question you will use them freely. And you will take care to collect for yourself such further materials as you may deem necessary. It is the wish of the board to arrive at certainty, upon a subject which has agitated and divided the public mind, and they will expect from you a detailed report, giving such reasons for your opinion as will be satisfactory to all who take an interest on the subject.

The notes of Messrs. Wilson and Mitchell will of course be at your service. They will exhibit to you also the instructions under which they acted, and give you such other assistance and information as you may require.

In conclusion allow me to remark, that the accomplishment of a complete water communication between the eastern and western waters, is a subject of intense interest to this commonwealth, and would materially enhance the value of our projected improvements. It is hoped therefore that no expedient that can lead to success, will escape your attention; upon your zeal, activity and competence, the utmost reliance is placed.

Very respectfully, your obedient servant,

Signed JOS. M'ILVAINE.

Chas. T. Whippo, Esq.

Pennsylvania Canal Office, Oct. 14. 1827.

In pursuance of these instructions, I proceeded to Curvinsville on the Susquehanna River, where I met Messrs. Wilson and Mitchell, and on the morning of the 29th of October, after having made the necessary arrangements, we proceeded to the summit lying betwixt the Sandy Lick and the Sinnemahoning. This summit is five miles and sixty chains long, and the amount of water which can be brought upon it is 424 cubic feet per minute, which will be supplied by the following streams, viz. Summit creek, Fall creek, South-east or Luther's branch, Rattlesnake run, Fourteen mile run, Whetstone run and Beaver run. Below this summit on the west side passing down the Sinnemahoning four miles, an additional supply will be obtained equal to 59 cubic feet per minute. On the other side, following the Sandy Lick four miles and sixty three chains, 50 cubic feet per minute will be obtained. Thus the whole quantity of water which will be supplied by streams is 533 cubic feet per minute, and the whole length of the canal to which this quantity is applicable, is fourteen miles and forty-three chains. We therefore perceive that allowing the requisite quantity here for evaporation and filtration to be equal to that upon other canals: viz. 50 cubic feet per minute for each mile, that these two items would amount to 722 cubic feet per minute, which exceeds that of the above mentioned supply, by 189 cubic feet per minute. To compensate for this deficiency and to obtain a supply for the locks, it is proposed by Mr. Wilson to construct an extensive reservoir in the valley of Sandy Lick. It is to cover 250 acres, and its surface is to have an elevation above the surface of the canal of four feet, so that the whole of its contents to that depth in case of necessity, may be used. This reservoir allowing it to average four feet deep, would contain forty-three millions five hundred and sixty thousand cubic feet of water, equal to 252 cubic feet per minute for a period of four months. From this, if we take the above mentioned deficiency of 189 cubic feet, there remains only 63 cubic feet for the supply of the locks, a quantity so palpably inadequate, that it is unnecessary to say more on the subject.

Before proceeding to the detail of my examinations on the summit, lying betwixt the Cushing and the Two Lick, it may be proper to make some remarks on the expense of iron pipes, through which water must be conveyed to supply it.

In order that I might be enabled to speak with some confidence on this subject, I obtained an introduction through Mr. M'Ilvaine, to Mr. Frederick Graff, superintendant of the water works at Philadelphia, who probably possesses more practical information on this subject than any other man in the state, or perhaps in the union. This gentleman very obligingly answered all the enquiries which I had to make, and also furnished me with a report of the watering committee, for the year 1818. This with the subsequent reports up to 1824, which were furnished me by Mr. M'Ilvaine, contain all that is most interesting on the subject of cast iron pipes. They furnish tables of pipes of different sizes and length, their weight, capacity and expense, and as these are all deduced from experience, founded upon the best theories of some of the ablest and most scientific men, we cannot for a moment doubt their accuracy.

Availing myself of these advantages, and aided by the valuable collections in Rees' Encyclopœdia on this subject, I am in hopes to give such a view of it, at least so far as relates to the expense, as to satisfy the minds of all who may be interested.

Mr. Mitchell in running his feeder lines, has made no calculation for descent, and the only way that can be obtained, is by cutting down the summit, which he informs us can be done to the extent of forty-eight feet. This however, will be extremely expensive, but as the object is great, it would not perhaps, be considered an insuperable objection, and we will therefore take for granted, that a descent of fifty feet in this way, and by means of dams at the heads of the feeders, might be obtained. Now having given the descent and the quantity of water per minute, the question arises, "how large must the diameter of the pipe be?"

In this calculation, a large allowance must be made for the friction on the inside of the tube: and the bore of the tube must be greater, in proportion to this friction. This will be verified by an experiment made by Desagulier's, on a leaden pipe, whose inward diameter was 1⅛ inches. In this experiment, he found at fourteen hundred yards distance from the spring that supplied it, it did not give a tenth part of the water that it would have given, at 30 yards from the spring.

A great many ingenious experiments have been made by men of science, for the purpose of establishing a theory, by which this friction could be accurately calculated. Amongst those who have given much attention to this subject, are Eytelwein, M. Du Bual, Dr. Young and Smeaton. These men by long continued application have succeeded in framing rules reduced to mathematical certainty, and applicable to all occasions, so that we are no longer in doubt on this subject; In my calculations in the case in question, I have used the formula of Dr. Young as laid down in Rees' Cyclopœdia, under the article water.

By this formula, I find that the tube for the Chest creek feeder which is 34 miles long, allowing it to lie straight on a regular inclined plane, must be twenty-five inches in diameter, but should the pipe conform to the shape of the country, as it undoubtedly must, making great angles of ascent and descent, its capacity would be

very materially lessened, but how much cannot at this time be stated, for the want of a more minute knowledge of the country. In conversation with Mr. Graff on this subject, he gave it as his opinion, judging from his own experience, that if the country was very rough, the consequent increased friction would be equal to a large portion of the water which the pipe was intended to discharge. To make a proportionate allowance in the size of the pipe, it is evident, would swell the expense to such an amount as entirely to defeat the object. I will therefore adopt my calculations to a more favourable route, hoping that such can be found, and suppose that two additional inches only to the tube, will give it a capacity equal to all contingencies.

The next subject of inquiry, is as to the thickness of the tube. This will depend in a great measure, on the weight which it is to sustain, and this will be greater or less, in proportion to the head of water. Knowing very nearly the strength of cast iron and the weight of water we might calculate pretty satisfactorily what would be required upon this subject, I shall be better satisfied to take the opinion of Mr. Graff. He says that these tubes will require to be at least three quarters of an inch thick on an average. Some may be less, but where the pipe is laid much below the head, they must be proportionably thicker.

With this thickness, the superficial cross section of iron in the twenty-seven inch pipe, will be equal to 65.4 inches, which being multiplied into the whole number of inches in 34 miles gives 140,387,296 cubic inches, which allowing 36 cubic inch. to be equal to ten pounds weight, is equal to 39,123,392 lbs. or 17,462 tons.

The other tube for bringing down the branches of Black Lick, making all the calculations as above, must be 36 inches in diameter, including the allowance for increased friction. This allowance, as in the other case, has been predicated upon a hope that a more favourable route can be found, than from the statements of Mr. Mitchell we could reasonably expect. The tube being also $\frac{3}{4}$ of an inch thick and 36 miles long, will contain 54,869,760 lbs. equal to 24,495 tons.

Our estimates may be made by the ton or by the foot. In conversation with Mr. Samuel Richards on this subject, who is extensively engaged in iron works, and who has the contract for furnishing castings for the city works, he assures me, that sixty dollars per ton, is a fair price for tubes of the above size and description. Making the estimate in this way then, viz. 41,956 tons at sixty dollars per ton amounts to two millions five hundred seventeen thousand three hundred and sixty dollars. But this does not include the interlaps or the expense of laying. As there are items which cannot at this time be very conveniently estimated, it would be more satisfactory to be governed by the prices which have been established by experience. In the city of Philadelphia, Mr. Graff informs me, that twenty inch pipe has cost when laid, seven dollars forty-two cents per foot run, the pipes alone cost five dollars per foot. But the pipes in question being much larger would cost more. He mentions a piece of pipe twenty-four inches in diameter, and seven miles long near the city of New-York, which was estimated to cost eleven dollars per foot when laid, and he thinks the materials and the work could have been obtained as cheap there, as in the city of Philadelphia. This is more directly applicable to the case in question, on account of the similarity of size. Mr. Mitchell says an abundance of iron ore can be found in the vicinity of these feeder lines, and believes on this account castings might be obtained very reasonable. We will therefore suppose, although the greater portion of the pipe in question, is a foot larger than that for which the above estimate was made, that with this advantage these pipes may be furnished and laid with the same expense. The estimate being made in this way, viz. 369,600 feet at 11 dls. per foot run, amounts to $4,065,600, and if to this item we add that of cutting down the summit level, to say nothing of the great amount of lockage here, and we should swell the estimate to very near five millions of dollars.

These calculations have led to a result totally different from what I had expected, producing an item of expense so serious and so formidable that it would seem almost entirely to settle the question as to the practicability of the route. But if it should still be said, that to make this improvement is of such intense importance that the state would be willing to forego any considerations of expense in order to effect it, it then becomes necessary to go a little further and enquire whether, after all, there is any well grounded hope of its answering the desired object.

This depends principally upon the supply of water on the summit level, and this supply Mr. Mitchell informs us is equal to 744 cubic feet per minute.

The length of the canal to which this is applicable is seven miles, upon which after using the requisite quantity for evaporation and filtration, viz. fifty cubic feet per minute for each mile, there remains only three hundred and ninety-four cubic feet per minute for the use of the locks.

This with locks of ten feet lift, and equal in other respects to those of the Pennsylvania canal, would be sufficient to pass twenty-one boats over the summit every twenty-four hours. This is the most favourable view that can be taken of this subject.

The above is respectfully submitted.

Signed by CHARLES T. WHIPPO, *Engineer.*

Philadelphia, Dec. 14, 1827.

TESTIMONY RESPECTING MANUFACTURES.

In our two last numbers we published abstracts of the evidence relating to wool and woollen goods: the present concludes the evidence on cotton, iron, glass, sail cloth, paper, &c. With much more expense of time and labour than persons generally would suppose from the result, would be required, we have endeavoured to exhibit the material facts, to be collected from the examination; and furnish a basis for calculations which may be useful, either to those who propose to engage in manufactures, or who may be disposed to arrive at conclusions on either side of the present question from the facts disclosed under oath by the witnesses summoned before the committee of Congress.

COTTON FACTORIES.

Mr. *Dexter* is concerned in "Oneida Manufacturing Society," "Utica Cotton M. Co:" and "Whitestown Cotton and Woollen Manufacturing Company." This last makes fine cotton cloths, No. 32, and no woollen goods; the others make No. 14 and 15. Capital of the Oneida Company in 1813 or 1814, $88,000; paid a very good interest till 1815; no dividends for two or three years afterwards; during that time the stock fell from $50 to 15, (present price) for $22 paid in. Dividends for last two or three years at rate of 10 p. c. per annum, and last half year of 13 per cent.; uses principally Georgia upland cotton; thinks there is but one factory that uses Sea Island cotton; viz. "York Mills," in his district.

Mr. *Bakewell* states, there is one very extensive cotton factory at Pittsburgh, makes coarse cottons, such as twist, shirtings, sheetings, &c.; proprietor says he cannot make fine for want of protection: two others in contemplation.

Joseph Marshall, of Hudson, N. Y. has been engaged for 30 years prior to last August, in Manchester, England, and now is interested in four factories; viz. one at Troy, makes calicoes for shirting and printing, in equal proportions, one at Whitestown, makes only shirtings; and one near, the last, called York Mills, makes shirtings and cambric muslins; 4th, near Hudson, does nothing but bleach and print cloths made at his and other factories:

he uses principally New Orleans and Alabama cotton; consumes about 1000 bales annually, which usually costs at the factory 11 to 14 cents, including one cent per lb. freight and other charges from N. Orleans and Mobile to factory; at York Mills spins from No. 32 to 50; at Whitestown mostly No. 22; at Troy No. 35. The finest they weave is No. 50, which is made into cambric muslin. That which he prints is called the 1200 reed, and is made of No. 35 exclusively; but purchases and prints from No. 12 to 40, none higher. The proportion that he prints to the quantity he manufactures is very small; at Whitestown he makes 2000 yards per week, at Troy 3000 yards, at York Mills 7000 yards; and prints from all only about 1400 yds. per week.

What he makes at Whitestown, (mostly No. 22), commands 12½ cents in the grey or unbleached state; at York Mills (32 to 50), all is bleached before sale, and brings 22 cents; the cambric muslins have not yet been brought into market: cotton shirtings made at Troy, of No. 35, are bleached and sold at 19 cents; that which is intended for printing is worth, before it is bleached, (No. 35), 12½ cents. He purchases about 16000 yards unbleached, weekly, for bleaching and printing, at 6¾ to 14 cents, which afterwards sells from 11 to 30 cents. He knows of 6 printing establishments, each of which prints more than he does, and many smaller ones, but none that spins so fine. He has used Santee cotton (called Sea Island) a short time in warp, but finds the New Orleans to answer quite as well, and much cheaper.

John Siddal, of Wilmington, Del. has been intimately acquainted with spinning and weaving cotton, for nearly 40 years; spun from 1814 to 1823, No. 24 to 30, and wove fine numbers for printing; since then spins from No. 5 to 10; does not weave, but sells the yarn; uses Georgia upland; price of late has generally been 10½ to 11½ cents, including bagging and rope; at this time spins nothing higher than No. 10; prices, No. 5 to 9, 22 to 23 cents, No. 10, 22½ to 23½, less commissions, &c.; capital, about 5000 dollars, all in machinery; produces annually about 80,000 pounds yarn; employs about forty hands, of various ages and sexes.

Mr. *Tufts* says, "There is Machinery in Mtts. which can manufacture Sea Islands: they have spun as high as No. 70, and is told can spin finer. There is a small establishment in his neighbourhood which uses Sea Islands only, and makes thread entirely; understands from the owner he has done a very fair business; a very large thread manufactory is now erecting there also.

Cost of Yarn.

Mr. Siddall says the price of the raw material, expense of spinning, waste, &c. makes it cost 19 to 20 cts. per pound.

Difference of price at which the English manufacturer can afford his fine and printed cottons in the English and American markets?

Mr. *Marshall.* English manufacturers can afford fine printed, or other cottons for the American market for *one-third* less than the American manufacturer. It costs the English manufacturer fifty per cent. in the English market to get printed cottons into the American market; on cotton of one yard wide, made of No. 35 yarn, and in the 1200 reed the operative duty is at this time just 70 per cent. on the cost in England; other charges of insurance, being commissions, freight, exchange, &c. is 25 per cent: he speaks of cloth that would cost in England about 9½ cents per yard. Having been a large exporter from Manchester, he is enabled to state this with accuracy.

Difference of Expense to a proprietor of a factory between manufacturing the same qualities of cotton in the United States and in England.

Mr. *Marshall.*—The buildings can be put up for about the same in Hudson as in England, and ten per cent. cheaper in Whitestown. The machinery altogether will cost nearly double in this country of what it will in England; independently of propelling power. There they work by steam, and in this country we work by water, the first cost of which with water privilege is about the same.

Difference of Expense of Printing same patterns and qualities of Cloth in the two countries.

Marshall.—One-third higher here than in England, owing to difference of price of labour, fuel, drugs, and wages. The fuel which costs $27 in Manchester, will cost in Hudson 120 to do the same business. The 112 pounds of coal in Manchester costs ten cents; oak wood in Hudson is four dollars per cord.

It is difficult to ascertain the difference in labour, owing to the variety of it, but generally, manufacturing labour is lower in England than here.

Why can Manufacturers now sell cottons so much lower than formerly?

Because of improved machinery, price of cotton, and increase of skill.

Can Cotton be packed in bagging made of Cotton, and transported to England in good order?

Marshall says it can as well as in hemp or flaxen, and will command more in the market, particularly in square bales, because the bag can be applied to a valuable purpose, and because as 4 lbs. per 100 wt. are allowed for tare, and as cotton weighs less than hemp, the purchasers will give the preference to that packed in cotton. It is worked up into coarse cotton and sold for half price, and also can be used for making paper, for which the hemp is usually applied. He does not think, if there were here no duty, or a small one on this kind of bagging made in England, that it would be made there to any extent, and thereby increase the consumption of cotton, as the profit would not pay for the labour; but it may be manufactured in the U. S. to great advantage 42 inches wide, and sold at 14 cts. and occasion a great consumption of raw material.

Duty.

It is generally believed that the present duty on coarse cottons not printed, is sufficient to enable the manufacturers to do a fair business, and that they are now doing a good business, and that a minimum duty on fine cottons would produce the same results; and that to enable the manufacturer of printed cottons to compete with the English, a further duty is necessary. Mr. Marshall thinks of 2 cents per running yard, which would be equivalent to an advalorem duty of 10 per cent. and Mr. Siddall thinks duty necessary on finer cottons, and should extend to grey or brown, as well as coloured or printed of every description, or otherwise they will be imported in the brown or white state, and printed or dyed in this country.

Mr. Dexter thinks the coarse cotton manufactures in this country so well established, that they could be made if the present minimum duty were reduced, or even repealed; but does not think it ought to be, as it would create a contest between American and foreign capital, ruin some establishments and compel all to sustain themselves at a loss; though as the article can now be afforded as cheap as it is from England, they would ultimately accomplish it.

Mr. Marshall thinks the manufacturer of cottons in the U. S. is enabled, considering the means of payment by the consumer to use more of it than if he depended on a foreign supply.

IRON.

Quantity Manufactured, and where?

Mr. *Mitchell*, of Bellefonte, Centre county, Pa. states, that in the counties of Mifflin, Huntingdon, and Centre, there are annually made 4000 tons of bar iron, and of pig and castings 8500 tons, from which the 4000 tons of bar are manufactured. The remainder is sold in pigs and

castings. He estimates the sum total of iron annually manufactured in Pennsylvania at

21,800 tons of bar iron,

47,075 tons of cast metal, of which 37,200 tons are used in making bar iron, and 14365 tons castings; a part in air and a part in blast furnaces. One hundred tons of iron are converted into nails.

Also, that there were as many forges built in 1820 as there are now, but were not all in operation; there were 450 tons more manufactured in 1827, than in 1820 (of bar iron). Thinks the business will not increase, owing to scarcity of timber. There may perhaps be an increase of 600 tons per annum.

Mr. *Keese* states, there are manufactured in the neighbourhood of Lake Champlain about 3000 tons of bar iron.

Mr. *Jackson*, of Rockaway, Morris county, N. Y. has a rolling mill, in which he rolls iron into rods from three-eighths to three inches diameter, and squares from three-eighths to an inch spikenail rods, slit band iron, iron scrolls, &c. There is another large establishment of the same kind said to roll 1000 tons annually; here also are made chain cables. Within a circle of thirty miles diameter, there are 81 forge fires now in use. Each forge has two fires and one hammer. In the same circle there are also thirty forge fires abandoned, prior to 1818, owing to low price of iron at that time. The quantity made in Morris, Bergen, and Sussex counties is estimated at 2050 tons: capital invested in 110 forge fires now in operation $1,210,000; number of hands, 5720; each fire capable of making 25 to 35 tons per annum.

Expenses of making Iron.

Mr. Keese exhibits a statement in detail of making 75 tons: viz. 225 tons Rock ore at 6 dls. per ton; casting 2. 37,500 bushels coal at 4½ cents. Bloomer's wages $18 per ton. Laborer $1 per day. Mechanics $3 per ton. Insurance 1½ per cent. on 2000 dols. Carting to Lake 2 dols. per ton. Expenses to N. Y. 6 dols. per ton. Commissions 516, (on sales of 75 tons, at 90 dols. 6750 dols.) Total 6330 dols. Exclusive of proprietor's time and attention, interest on capital; requires forty hands. W. Mitchell estimates the expense of making a ton of bar iron from the pigs at 75 dols. including the value of the pigs 26.67. all the bar iron is made from pigs in his section. Mr. Jackson pays the bloomers for making a ton of bar iron $16 50, finding themselves. The coal costs $42 50, and the three tons of ore 12 dols. The petition from three counties of Jersey estimates the cost of a ton and getting it to N. York at 79 25.

Mr. Jackson estimates the expense of rolling a ton of bar iron into iron one inch square, at 14 87; and it will lose in weight by the operation 3 per cent. on 80 dolls., making $2 40; total 17 27. Two tons a day will constitute the average work, which yields a profit on rolling of 2 73 per ton, equal to 5 46 per day on an establishment worth 20,000 dols: The expenses have not since increased.

Quantity of Iron to one ton Bar Iron.

Mr. *Mitchell* states that 6000 tons of pigs will make 4000 tons of bar iron, and it is sometimes a part of the contract with the workmen that they shall make it yield that quantity—1½ tons.

Quantity and cost of Ore to one ton of Iron.

Mr. Jackson,	3 tons of ore at $4 at forge.	
Keese,	3	6
Mitchell,	2½ to 3	5

Quantity and Cost of Coal to one ton of Iron.

Mr. Keese, 500 bushels for converting the ore directly into bar iron at the forge without the intervention of a furnace, at four and a half cents.

Mr. Mitchell, in making a ton of pigs, 220 bushels, and in making a ton of bar iron from pigs, 175 bushels. Forge coal worth 6 cents at forge, and furnace coal 5 cents.

Mr. Jackson 800 bushels to make one ton of bar iron from the ore—costs 5 cents per bushel. Coal from oak, chesnut, &c.

The product of each Fire?

Mr. Mitchell—generally 100 tons to each finery fire.
Mr. Jackson—25 to 35 tons each forge fire.

Market and Prices of Iron.

Mitchell—Pittsburg is the best market for that which goes west, say 2-3. Sometimes the iron masters go down the river with it. It costs from 25 to 30 dollars per ton to take it to Pittsburg; the price there is from 100 to 115 dollars. A small part is sent to Baltimore and Philadelphia, where it sells at from 85 to 95 per ton. Carriage to the former 10 dollars, to the latter 12.

Jackson—sends to N. York: costs 3 75 per ton: sells on average at 80 dols.- rolled iron 100 to 110 dolls.

Price of Iron at the Works.

Mr. Keese—bar iron hammered from blooms 80 to 85 dollars per ton—small bars to order 5 dollars more.

Mitchell—bar iron fixed price in barter or exchange 100 dollars. Pig metal 26 67, when bar is at 100.

Jackson—bar iron from bloomery, worth in 1825, 75 dollars; 1826, 80 dollars; 1827, 75 dollars.

Supply of Ore.

Inexhaustible in the neighbourhoods spoken of.

Manufactory of Wood Screws.

Dr. Mitchell says there is one in Centre which can make 150 groce in 24 hours, but only makes enough to keep the hands together. It completes the screw, taking the iron in the pig; are sent to the sea-ports for sale, at the same price as foreign, and are then probably returned again to the country.

Duty required.

No protection is required, for hoop-boiler, rolled and slit nail and spike rods: with this last a species of iron from Russia interferes and requires to be placed on the same footing as nail rods. Hammered bar iron requires protection of about 5 dols. per ton. A duty is proposed on some kinds of rolled and slit iron and sheet iron.

STEEL.

There are no facts stated respecting this article. The opinions entertained respecting the duty are various. Mr. Keese thinks it should be increased; Mr. Mitchell believes it would be injudicious until it is ascertained whether the quality necessary for use can be made here; and Mr. Jackson conceives the duty is at present sufficient.

HEMP.

The growing of hemp is an important business in the counties of Bourbon, Jessamine, and Scott, of Kentucky. The market price for it, cleaned and ready for market, for 1825 and 1826, was 4 dollars for every 112 lbs.; last year about 5 dollars. It is manufactured extensively in Fayette, Clark, and Woodford counties into cotton bagging, yarns, and cordage. Neither the grower nor manufacturer are supposed to receive a fair compensation for the labour and capital employed. It is believed to be important that the duty be increased. More was given in 1827 than in 1826. It is also grown in Ohio, Pennsylvania, and New York.

SAIL DUCK AND FLAX.

There are three factories in the United States in operation for sail cloth and other articles from hemp and flax; six others have been suspended. The spindles in operation are capable of making 19,132 bolts or 765,280 yards of heavy duck.

The *Phœnix Manufacturing Company*, at Patterson, N. J. has a capital of 170,000 dollars, employs 265 hands;

viz. 109 men, at an average of 65 cents per day, 42 boys 8 to 14 years of age at 1 37½ per week, 61 women 2 37½ per week, and 53 girls 8 to 12 years of age at 1 37½ per week; all pay their own board. The president receives a salary of 1500 dollars per annum, and is superintendant; a clerk at 400 dollars.

Raw material used and quantity manufactured.—Flax exclusively. During 1827 employed 960 spindles and 200 twisting spindles. Flax wrought 382,478 pounds, all imported. The crown flax from Poland, in largest proportion, remainder from Ireland and Russia. From the gross amount of flax above, there were 237,093 lbs. of clean or hatchled flax, and 145,385 lbs of tow; the first is used for the warp, the tow for filling.

Cost of raw material.

Irish flax costs about 13 cents per pound; Russian, called "12 head St. Petersburgh," which is the best quality, about 11 cents. Polish "crown," which is better than Russian, but not so good as Irish, about 12 cents; these are the New York prices. American flax sells at 8 cents, which Mr. Travers ascertained from an experiment in 1822, would not answer, owing to its being prepared by dew rotting.

Time of pulling Flax.

In this country it is suffered to grow too long, with a view of raising seed, whilst the foreign is pulled when the bloom falls, and before the bole is formed. Mr. Travers considers the difference between American flax, pulled when the blossom falls, and water rotted and that which is pulled after it has seeded, and dew rotted, would be fifty per cent. better to the farmer and manufacturer; estimated from present prices. The one gains that much by the quantity and quality of the article, and the latter can afford to give that much more for it than it is now worth to him. Flax pulled at this time will weigh 33 1-3 per cent. more than when suffered to go to seed.

Kinds of fabric manufactured.

Made last year 7,010 bolts or pieces of 40 yds. each, viz. about 5800 of canvass, 1000 of hammock cloth and 210 of bagging. The cotton bagging is made of the most inferior of the tow. The canvass is 20 inches wide, hammock cloth about 44 in. and the bagging 42 in.

Cost of manufacturing a bolt of Duck, exclusive of raw material.

Of one kind of duck made by Mr. Travers, each bolt requires 65 pounds of flax, the cost of manufacturing from the flax and preparing for markets this bolt will be on an average $5 05; the value of the flax at 13 cents, $8 45, and the asking price for it is $15 50; but sales difficult at this price. Nothing included for commissions, interest, &c.

Market.

Principal market furnished by contracts with Navy Department; made some sales in N. Y. Boston and Philadelphia, also in N. Orleans in 1826; sold in New York $12,036 96.

Difference between use of Flax and Hemp in Duck.

Hemp costs as much as flax, but does not make so durable an article, and the waste is 25 per cent. greater than from flax; cannot weave hemp without starching or sizing, which causes the cloth to mildew more rapidly; flax duck is not starched or sized at all. There is the same difference between dew-rotted and water-rotted hemp, as between flax cured in that way; it exists not in strength but in the durability of the article; these from dew-rotted hemp certainly decompose, when exposed to weather, much sooner than those made from water-rotted hemp or flax.

Sail Cloth made from Cotton.

There are about 1500 bolts of sail cloth manufactured annually in Patterson, from cotton. There is also a factory in Baltimore, which makes about the same quantity. The cloth costs rather less than that made from hemp or flax; the demand for it is better. 1100 bolts from Patterson were last year sold in Philadelphia, and 200 in N. York. Consumption of it must increase, and Mr. Travers thinks it will soon be exclusively used by all river craft and coasting vessels. If all the craft employed in the North River were to be refitted with sails, it would require 828,000 yds. It is preferred on board fore-and-aft rigged vessels, because they can sail from ½ to ⅔ of a point nearer to the wind than with hemp or flax sails, nor does it stretch or shrink so much as flax canvas, and it is better and cheaper than sails made of American dew-rotted flax or hemp, and is more simple in manufacturing than cotton shirting.

Comparative weight and prices of Duck.

No. 1 to 8 weighs 20 to 37¼ lbs. prices per yard of cotton 31 to 41 cts. of flax 30 to 38¾, Russia 21, weighs 47 lbs. price about 56 cts. Ravens do. 16 lbs. do. 16cts. each bolt is supposed 40 yds. cotton and flax duck not starched; Russia and English are; cotton duck is 24 in. wide, flax 20, Russia 30.

Duty required.

An higher one on raw hemp would not benefit the grower nor increase the consumption, but should be laid on the manufactured articles—proposed, on all sail duck 9 cts. per square yard, to increase ½ cent annually for 4 years; on osnaburgs, ticklenburgs and furlaps 5 cts. per yard, and increase ½ cent annually for 4 years. No drawback to be allowed on less than 50 or 100 bolts, and duty on sails made up on board vessels abroad.

Miscellaneous.

Coarse goods cannot be manufactured from flax to any profit under present duties on foreign fabrics.

It is frequently the case that vessels clear out with old and worn sails, and supply themselves in foreign ports, to avoid the duty.

Samples of American duck have been sent to foreign countries, and been imitated in Russia and England; the Russian and English imitations are starched.

By a comparison made by Capt. Porter, and a certificate from Com. Rogers, it appears that the American canvass is more durable than the imported.

If the American flax were pulled at a proper season and water-rotted, there would now be a demand, if all the factories were in operation, for 950,000 lbs. flax and 5000 tons of hemp at 50 per cent. better price than is now paid for dew-rotted American.

The largest flax Mr. Travers ever saw was raised on rice lands in S.Carolina, a sample was sent to him 5 feet 11 inches in the stock.

Spirits from Grain.

The distillation of whiskey is considered very important to the agriculturist, as finding him a market for his grain; it converts it into less bulk and diminishes cost of transportation. The price in Ohio 16 to 20 cts. The price of grain regulates the price of whiskey.

The western states are supposed capable of supplying the United States. They grow corn for distillation into whiskey.

The quantity distilled is believed to be increasing.—Average product of one bushel of corn is two gallons of whiskey.

A farmer receives as his share of whiskey half the product, which is usually one gallon per bushel.

One half corn and one half rye produces more whiskey than corn or rye alone.

Hon. N. Garrow distilled in last 12 months 80,000 gals. and expects to make the same this year.

The opinion is that the diminution in the price of whiskey does not increase the consumption of it.

Spirits from Molasses.

One gallon of good molasses will produce a gallon of

spirits hygrometer proof; inferior molasses produces less by 5 to 7½ per cent.

The difference in value between a gallon of rum made from molasses and the gallon of molasses is 12½ cents; a distiller can well afford to carry on business, if he receive 8 to 10 cts. per gallon more for spirits than he gave for molasses.

The distilleries in the neighbourhood, at Hudson and at Albany, distil about 350,000 gallons per annum.

Quantity of spirits now distilled is supposed to be one half less than in 1822, owing to the preference given to whiskey.

Large quantities of whiskey are used in the distillation of rum from molasses.

The average weight of 100 gallons of molasses, such as is used in distilling rum, is about 950 to 1050 lbs

Glass.

Mr. Bakewell uses in manufacturing glass about 50 to 60,000 lbs. of Missouri lead, and two-thirds that quantity of potash. Employs about 60 hands, of whom 20 or 25 are boys.

Mr. A. Way, at Washington, makes about 3000 boxes window glass per annum.

Window glass in Pittsburg per box 100 square feet 8 by 10—$3 80 to $4; in Washington $6 50 to 8.

No protection required on glass and none on paper.

CRIMINAL BUSINESS OF THE MAYOR'S COURT.

YEARS.	Number of Bills.	True Bills.	Ignoramuses.	Convictions.	Acquittals.	Sentenced to Imprisonment at Hard Labour.	Sentenced to Imprisonment only.	Fined.	Recognizance Forfeited.	Nol. Prosequi.	Continued.
1821—March Sessions	117	106	11	61	14	40	6	52	10	4	17
June Session	144	124	20	68	18	44	5	63	9	4	25
September Session	108	86	32	41	17	17	5	36	10	3	15
December Session	157	136	21	70	19	52	3	10	7	3	37
1822—March Session	154	137	17	69	28	49	5	13	5	0	35
June Session	167	135	32	70	24	38	4	27	1	2	38
September Session	138	85	53	45	9	31	4	9	1	6	24
December Session	153	141	12	75	15	40	8	25	5	8	38
1823—March Session	126	106	20	51	20	40	4	4	4	2	29
June Session	135	115	20	68	14	38	3	21	9	4	20
September Session	106	86	20	47	1	31	2	13	5	3	21
December Session	167	156	11	84	29	67	4	14	11	6	26
1824—March Session	186	143	43	82	27	41	16	16	5	6	23
June Session	174	121	53	67	24	45	4	31	13	7	10
September Session	155	97	58	56	22	26	7	26	6	4	9
December Session	142	96	46	62	17	39	1	24	6	4	7
1825—March Session	160	136	24	85	27	59	2	32	10	9	5
June Session	178	127	51	85	20	57	4	26	6	5	11
September Session	196	145	51	91	23	46	9	31	8	10	13
December Session	175	140	35	92	27	71	3	20	4	5	12
1826—March Session	127	91	36	39	29	32	1	14	6	2	5
June Session	159	103	56	55	28	21	12	23	9	6	5
September Session	159	107	52	66	17	38	7	17	8	8	11
December Session	149	121	28	67	29	46	1	16	2	7	18

Published by order of the Acting Committee of the Philadelphia Society for Alleviating the Miseries of Public Prisons.

JAMES J. BARCLAY, Secretary.

NEWSPAPERS

Published in Pennsylvania prior to the Revolution.

Extracted from Thomas' History of Printing, 1810.

PHILADELPHIA.

Fifty years ago there were only three newspapers published in this city, viz. two in English, and one in the German language. In 1762, two English and two German papers existed, one of the latter was afterward discontinued, and from that time until the year 1773, only three papers, two English and one German, were printed at Philadelphia.

The first newspaper in Pennsylvania was entitled

No. 1.

The AMERICAN Weekly Mercury.

TUESDAY, *December* 22, 1719,

It was printed on a half sheet of pot. Imprint—"Philadelphia: Printed by *Andrew Bradford*, and Sold by him and *John Copson*." May 25, 1721,* Copson's name was omitted in the imprint, which was altered thus—"Philadelphia: Printed and Sold by *Andrew Bradford*, at the BIBLE in Second Street; and also by *William Bradford* in *New York*, where Advertisements are taken in." William Bradford's name as a vender of the Mercury in New York was omitted in December, 1725. In January, 1730, an addition was made to the imprint, viz. "Price 10 *s.* per Annum. All sorts of Printing Work done cheap, and old Books neatly bound." In 1738, it was printed in "Front-Street," to which he transferred his sign of the Bible.

The Mercury occasionally appeared on a whole sheet of pot, from types of various sizes, as small pica, pica, and English. It was published weekly, generally on Tuesday, but the day of publication was varied. In January, 1742-3, the day of the week is omitted; and it is

* Copson at this time opened the first insurance office in Philadelphia.

dated from January 18, to January 27; after this time it was conducted with more stability.

In No. 22, two cuts, coarsely engraven, were introduced, one on the right, the other on the left of the title; the one on the left was a small figure of Mercury, bearing his caduceus; he is represented walking, with extended wings; the other is a postman riding full speed. The cuts were sometimes shifted, and Mercury and the postman exchanged places.

The Mercury of December 13, 1739, was "Printed by Andrew and William Bradford," and September 11, 1740, it had a new head, with three figures, well executed; on the left was Mercury; in the centre a town, intended, as I suppose, to represent Philadelphia; and, on the right, the postman on horseback; the whole formed a parallelogram, and extended across the page from margin to margin. This partnership continued only eleven months, when the Mercury was again printed by Andrew Bradford alone. The typography of the Mercury was equal to that of Franklin's Gazette.

Andrew Bradford died November 23, 1742; and the next Mercury, dated December 2; appeared in mourning. The paper was suspended one week, on account of the death of Bradford; therefore the first paper "published by the widow Bradford,"* contained an extra half sheet. The tokens of mourning were continued six weeks.

The widow entered into partnership with Isaiah Warner, and the Mercury of March1, 1742 bears this imprint —"Printed by Isaiah Warner and Cornelia Bradford." Warner, in an introductory advertisement, informed the public that the paper would be conducted by him.

Cornelia Bradford resumed the publication, October 18, 1744, and carried it on in her own name till the end of 1746. It was, I believe, soon after discontinued. The Mercury was well printed, on a good type, during the whole time she had the management of it.

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The Universal Instructor in all Arts and Sciences: And Pennsylvania Gazette.

This was the second newspaper established in the province; it has been continued under the title of The Pennsylvania Gazette to the present time, and is now the oldest newspaper in the United States.

No. 1, was published December 24, 1728, by Samuel Keimer, on a small sheet, pot size, folio. In No. 2, the publisher adopted the style of the Quakers, and dated it "The 2d of the 11th mo. 1728." The first and second pages of each sheet were generally occupied with extracts from Chamber's Dictionary; this practice was continued until the 25th of the 7th mo. 1729, in which the article *Air* concludes the extracts.

When the paper had been published nine months, the printer had not procured one hundred subscribers.

Franklin, soon after he began business, formed the design of publishing a newspaper, but was prevented by the sudden appearance of this Gazette: he was greatly disappointed; and, as he observes, used his endeavours to bring it into contempt. He was successful, and the publisher, being obliged to relinquish it, for a trifling consideration resigned it toFranklin. At this time Franklin was in partnership with Hugh Meredith; they began printing this paper with No. 40, and published it a few weeks on Mondays and Thursdays, on a whole or half sheet pot, as occasion required. The price "ten shillings per annum." The first part of the title they expunged, and called their paper "The Pennsylvania Gazette. Containing the freshest Advices Foreign and Domestick." The Gazette, under their management, gained reputation, but until Franklin obtained the appointment of postmaster, Bradford's Mercury had the largest circulation; after this event, the Gazette had a full proportion of subscribers and of advertising custom, and it became very profitable.

* Andrew Bradford's widow, Cornelia.

Meredith and Franklin separated in May 1732. Franklin continued the Gazette, but published it only once a week. In 1733, he printed it on a crown half sheet in quarto.—Imprint, "Philadelphia: Printed by B. Franklin, Post-Master, at the New Printing-Office near the Market. Price 10 *s.* a year. Where Advertisements are taken in, and Book-Binding is done reasonably in the best manner." In 1741, he enlarged the size to a demy, quarto half sheet, and added a cut of the Pennsylvania arms in the title. In 1745, he reverted to foolscap folio. In 1747 the Gazette was published "By B. Franklin Postmaster, and D. Hall;" it was enlarged to a whole sheet, crown, folio; and afterward, by a great increase of advertisements to a sheet, and often to a sheet and a half demy. On the 9th of May, 1754, the device of a snake, divided into parts, with the motto—"Join or die," I believe, first appeared in this paper. It accompanied an account of the French and Indians having killed and scalped many of the inhabitants in the frontier counties of Virginia and Pennsylvania. The account was published with this device, with a view to rouse the British colonies, and cause them to unite in effectual measures for their defence and security, against the common enemy. The snake was divided into eight parts, to represent, first, New England; second, New York; third, New Jersey; fourth, Pennsylvania; fifth, Maryland; sixth, Virginia; seventh, North Carolina; and eighth, South Carolina. The account and the figures appeared in several other papers, and had a good effect.

The Gazette was put into mourning October 31, 1765, on account of the stamp act, passed by the British parliament, which was to take effect the next day. From that time until the 21st of November following, the publication of it was suspended. In the interim, large handbills, as substitutes, were published, headed "Remarkable Occurrences."—"No Stamped Paper to be had," &c. When revived, it was published without an imprint until February 6, 1766; it then appeared with the name of David Hall only, who now became the proprietor and the printer of it. In May following, it was published by Hall and Sellers, who continued it until 1777; but, on the approach of the British army, the publishers retired from Philadelphia, and the publication was suspended while the British possessed the city. On the evacuation of Philadelphia, the Gazette was again revived, and published once a week until the death of Sellers in 1804. After this event, it was printed by William and David Hall, and is now published by Hall and Pierrie every Wednesday. Hall the present partner is grandson of David, and the son of William Hall.

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The Pennsylvania Journal and the Weekly Advertiser.

This paper was first published on Tuesday, December 2, 1742. It was printed on a folscap sheet. The day of publication was changed to Wednesday. Imprint—"Philadelphia: Printed by William Bradford, on the West side of Second Street, between Market and Chesnut Streets." But soon after "at the Corner of Black Horse Alley.;'

About the year 1766, the imprint was, "Philadelphia: Printed and sold by William and Thomas Bradford, at the corner of Front and Market-Streets, where all persons may be supplied with this Paper at Ten Shillings a year.—And where Advertisements are taken in." In 1774, it had in the title a large cut, the device, an open volume, on which the word "JOURNAL" is very conspicuous; underneath the volume appears a ship under sail, enclosed in an ornamented border; the volume is supported by two large figures; the one on the right represents Fame, that on the left one of the aborigines properly equipped. This device remained as long as the Journal was published, excepting from July 1774 to October 1775, during which time the device of the divided snake, with the motto—UNITE OR DIE" was substituted in its room.

This paper was devoted to the cause of the country;

but it was suspended during the period that the British army was in possession of Philadelphia.

William Bradford died in 1791; the Journal was continued by the surviving partner subsequent to 1800; it was finally discontinued, and the True American, a daily paper, was published in its stead.

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The Pennsylvania Chronicle, and Universal Advertiser.

Containing the freshest Advices both Foreign and Domestick; with a Variety of other matters, useful, instructive and entertaining.

"Rara Temporum Felicitas, ubi sentire quæ velis, et quæ sentias dicere licet!"—Tacitus.

In the middle of the title was placed a handsome cut of the king's arms.

The Chronicle was published weekly, on Monday.—The first number appeared January 6, 1767, well printed from a new bourgeois type, on a large medium sheet, folio. Imprint—"Philadelphia: Printed by William Goddard, at the New Printing Office, in Market-Street, near the Post-Office. Price Ten Shilling per Annum."

This was the fourth newspaper in the English language established at Philadelphia, and the first with four columns to a page, printed in the colonies. The second and third years, the Chronicle was printed in quarto, and the fourth year again in folio, but on a smaller sheet. It was ably edited; in all respects well executed; and it soon gained an extensive circulation. Joseph Galloway a celebrated character at the commencement of the American revolution, and a delegate to the continental congress from Pennsylvania, before the declaration of independence, and Thomas Wharton, a wealthy merchant, but neither of them in the whig interest, were silent partners with Goddard. The Chronicle was established under their influence, and subjected to their control, until 1770. Benjamin Towne, afterward printer of the Pennsylvania Evening-Post, was also, for a short time, a partner in the Chronicle establishment; he was introduced to this concern by Galloway and Wharton, who sold him their right in it. In 1770, Goddard separated from his partners, and the politics of the Chronicle became more decided in favour of the country. A portion of it was, however, for a long time, devoted by Goddard to the management of a literary warfare which took place between him and his late partners.

The Chronicle was published until February, 1773. It was then discontinued, and the publisher of it removed to Baltimore.

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The Pennsylvania Packet, or the General Advertiser.

The Packet was first issued from the press in November, 1771. It was well printed on a sheet of demy, by John Dunlap, in Market street, Philadelphia. The day of publication was Monday. A well executed cut of a ship divided the title.

From September 1777, to July 1778, when the British army was in possession of Philadelphia, the Packet was printed at Lancaster. On the return of the proprietor to this city, it was published twice a week. For some time it was printed three times a week; but it was again reduced to twice a week in 1780. In 1783, Dunlap, for a very valuable consideration, sold this establishment to D. C. Claypoole, who had previously been a partner. Claypoole again printed the Packet three times a week; and, about 1784, he published it daily. This was the first daily paper printed in the United States. Several years elapsed after Claypoole became the proprietor of the Packet, before the city was crowded with newspapers which gained permanent establishments. He soon acquired a competence, sold his right in the Packet to Zachariah Poulson, and retired from business. Poulson continues the publication of this paper.

The Pennsylvania Ledger; or, The Virginia, Maryland Pennsylvania, and New Jersey Weekly Advertiser.

This Ledger was first published January 28, 1775. It had a cut of the king's arms in the title. It was printed on a demy sheet, folio, with new types: the workmanship was neat and correct, and it appeared on Saturdays. Imprint—"☞Philadelphia: Printed by James Humphreys, Jun. in Front-Street, at the Corner of Blackhorse Alley;—where Subscriptions are taken in for this Paper at Ten Shillings per Year."

The publisher announced his intention to conduct his paper with political impartiality; and, perhaps, in times more tranquil than those in which it appeared, he might have succeeded in his plan. He had, as has been stated, taken the oath of allegiance to the king of England; he pleaded the obligations of his oath, and refused to bear arms against the British government; in consequence of which he was deemed a tory, and his paper denounced as being under corrupt influence, The impartiality of the Ledger did not comport with the temper of the times; and, in November, 1776, Humphreys was obliged to discontinue it, and leave the city.

A few weeks before the British troops took possession of Philadelphia, in September, 1777, Humphreys returned, remained in the city whilst it was in their possession, and renewed the publication of the Ledger; but, when the royal army evacuated the place, it was again discontinued, and never afterward revived. Whilst the British remained in Philadelphia, the Ledger was published twice a week, on Wednesday and Saturday. The last number was published May 23, 1778, and the British army quitted the city about the middle of the following month.

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The Pennsylvania Evening Post.

Was first published January 24, 1775, by Benjamin Towne. It was well printed on half a sheet of crown-paper, in quarto, and published three times in a week, viz. on Tuesday, Thursday, and Saturday evenings; "price two pennies each paper, or three Shillings the quarter." This was the third evening paper which made its appearance in the colonies; the first was The Boston Evening Post, and the second The New York Evening Post. The reverend Dr. Witherspoon, member of Congress, and some other distinguished characters of that day, it has been said, furnished the Evening Post occasionally with intelligence and essays. Although the printer of this paper had been the agent of Galloway and Wharton, he was on the side of the country until the British army entered the city in 1777. He remained in Philadelphia after this event, and continued the Evening Post under the auspices of the British general until the city was evacuated. Towne was proscribed by a law of the state of Pennsylvania; he did not, however, leave Philadelphia, but again changed his ground; and, without molestation continued his paper until 1782, about which time the publication of it terminated.

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Story and Humphreys's Pennsylvania Mercury, and Universal Advertiser.

The Mercury first came before the public in April 1775; and was published weekly, on Friday, printed on a demy sheet, folio, with types said to be manufactured in the country. A large cut decorated the title; Britain and America were represented by two figures, facing each other, and in the act of shaking hands; underneath the figures was this motto—"Affection and Interest dictate the Union." Imprint—"Philadelphia; Printed by Story and Humphreys, in Norris's alley, near Front str. where Subscriptions, (at Ten Shillings per Annum) Advertisements, Articles and Letters of Intelligence, &c. are gratefully received."

The Mercury was short lived. The printing house whence it was issued, with all the printing materials therein contained, were destroyed by fire in December

1775; and in consequence of the event, the paper was discontinued.

This was the last attempt to establish a newspaper in the city befere the American revolution. At the conclusion of the war another paper by the same title was published by D. Humphreys, handsomely and correctly executed, and was continued for several years.

[*To be continued.*]

FRANKLIN INSTITUTE.

Report of the Committee of Instruction.

March 12, 1828.

The Committee of Instruction of the Franklin Institute, Report:

That regarding the high school as a most important auxiliary to the general design of the Franklin Institute, they have, in order more effectually to promote the views of the board, arranged themselves into committees of supervision, who are charged with the duty of visiting the school at least once every day, and of presenting regular statements of the condition of that department. The board may rest assured, that, under this arrangement, the committee will use their best endeavours to advance the interests of the school, by sustaining generally, the authority of the worthy principal, and his several assistants, and by sedulously culvating that happy spirit of emulation and industry, which has characterised the pupils hitherto, and occasioned much gratification to their parents and friends.

At the present juncture, in addition to the laborious duty of general superintendence, which occupies six and often eight hours a day; the principal, Mr. W. R. Johnson, gives instruction in the Greek language, Elocution, Composition, History, Natural Philosophy, and some other branches taught in the school.

The teacher of Mathematics is Mr. S. C. Walker, who is in constant attendance during the day; and gives instruction in Algebra, Geometry, Mensuration, Trigonometry; and in the higher departments of his particular branch; as also in the Latin language, English grammar, Book-keeping, &c.

Mr. Bolmar, who continues to teach the French language, is occupied every forenoon in instructing his numerous classes.

The class of pupils in the Spanish language, is under the guidance of M. Jose Elijio de la Puente who devotes the forenoon of each day to that task.

M. J. Martin Jakubowski teaches the German language to a class in the forenoon, and gives assistance to the geographical classes in the afternoon.

The younger classes are taught penmanship by Mr. William Adams; who gives instruction in the same branch, and also in geography, at the preparatory school which is under the care of Mr. Eli Griffith.

Mr. William Mason has the department of Drawing. By him the scholars are taught *linear drawing*, landscape and map drawing. He attends at the school three times a week, and is charged solely with communicating a knowledge of his beautiful, attractive, and most useful art.

In addition to the above named materials for promoting your views in regard to the diffusion of knowledge among the rising and hopeful members of your department of instruction, we may state, that there is an abundant furniture of globes, maps on rollers, pasteboard maps, atlasses, gazetteers, dictionaries and other books of reference; besides tasteful and very remarkably distinct patterns for drawing, an efficient chemical apparatus, and a valuable philosophical apparatus recently procured. These materials, the whole of which have been obtained at an expense of upwards of $3000 to the Principal, afford evidence, not only of the facilities scattered in the path of his scholars; but also of his liberality and anxiety to co-operate with you, in rendering the department as available as possible, in the dissemination of accurate and useful information.

The committee have further to state, that the semi-annual examination of the pupils took place in the third week of February; that it occupied three days of laborious investigation into the progress made by the classes, and was principally comprised under the following heads:

1. *Reading.* Perhaps no accomplishment is of more difficult attainment than the art of reading well. A majority of gentlemen, even of good and elaborate education, show forth, in reading aloud, the manifest deficiencies of the common modes of instruction on this point; the committee were, therefore, much surprised to find many excellent readers in course of the examination. The voice, of even very young scholars has assumed under a correct guidance, something of the fulness and power of riper years. A great attention to pauses, a deliberate and distinct pronunciation, and an unembarrassed employment, of the natural powers of elocution, indicated to us the care with which their habits in this essential point of education are formed.

Writing. The specimens presented for our inspection were, for the most part, good.

Arithmetic. The classes were examined either in new examples or in those contained in Colburn's Arithmetic, and not only the committee, but the visitors generally, noticed the rapidity with which problems were solved in vulgar and decimal fractions, of which *the meaning*, as well as the methods, seemed to be clearly comprehended by the pupils.

Geography, ancient and modern;—the use and construction of Maps;—Globes. A very satisfactory examination was made on the above named subjects. Very considerable and accurate knowledge was manifested by many; some of the maps presented for our inspection were of remarkable beauty and correctness: the use of the globes appeared to be well understood by many individuals, who solved for us various problems in latitude, longitude, time, &c. &c. Our common opinion is, that very encouraging progress has been made in these departments.

Latin and Greek Languages. The higher classes appeared to possess a correct knowledge of Latin, evinced not only in pronunciation and in their translations, but in parsing, &c. Tacitus was read with facility. Their knowledge of Greek was creditable, particularly as shown in the examinations in the the poetry of the Græca Majora, and Sophocle's Tragedies. Generally, it may be remarked of the larger proportion of those who were examined in these languages, that, however differing in stages of advancement, they appeared to have been taught on a system, combining with great accuracy the most expeditious progress. Credit is due to Mr. Johnson for his successful efforts to acquire a familiar use of the modern Greek, whereby he has been enabled to teach his classes such a pronunciation as will greatly and advantageously concur in abolishing the provincialism which renders that noble language unintelligible when spoken or read by persons of different nations.

German Language. Several boys, (not less than 30) make satisfactory progress under the tuition of Mr. Jakurbowski. It is exceedingly to be desired that an increased attention should be paid to this branch in the American schools; in Pennsylvania it is commonly used by a great number of our fellow citizens, a circumstance which, leaving out of view the vast stores of erudition it contains, ought to commend it to the special favour of the public.

French and Spanish Languages. Mr. Bolman, the teacher of French, has about ninety, and M. de la Puente about thirty pupils. The French pupils have made very creditable progress; many of them read French with facility; and, with a good pronunciation, have acquired, under the assiduous care of M. Bolman, a competent knowledge of the grammatical construction and idiom of that most useful language. The Spanish scholars read, and pronounced with ease and correctness, passages which they translated from Spanish into English,

and again into Spanish. We may safely refer to parents generally for proofs of the satisfactory progress made here.

English Grammar;—Elocution;—Composition. The committee wish not to bestow indiscriminate praise; but they can not withhold their commendation of the remarkable progress, made particularly in the first of these branches; in which several pupils displayed a ripe and pregnant scholarship. One of the monitors ——— was placed on an elevated stage; and directed to ask questions in English grammar, of any boy in the school; it is believed he found not one unprepared with the correct answer; then being in turn subjected to a severe scrutiny by pupils from various parts of the house, he clearly vindicated, by the correctness and fluency of his replies, his undoubted claim to the rank of monitor.

In *Geometry*, *Algebra*, and *Trigonometry*, and other mathematical studies, the classes reflect credit on their instructors.

Drawing. Those of the board who are familiar with the productions of Mr. Mason's pencil, will easily be convinced that under his tutelage a good progress will be made: some of the specimens were very gratifying to the committee who recognise in them the care of a teacher whose pencil for truth, beauty, and grace, is scarcely exceeded by any in this country.

The committee, without particularising various other subjects on which the scholars were examined, will proceed to state, that it was a source of regret, that a larger attendance of their fellow-citizens, and especially of parents and guardians of the students could not be obtained. They were persuaded that the system adopted in the high school would, by dint of facts, have commended itself to their hearty and unbiassed approval. In fact, the monitorial system, which has found some opposition out of doors, appears to us to be most happily adapted to produce a contagious spirit of emulation among young persons, who holding converse chiefly with those of equal age, receive from them more cheerfully and understandingly, the necessary explanations, which have among them a sort of technicality, lost in riper years. Your teachers have found that if they once succeed in imparting to an intelligent monitor the meaning of any problem, a short interval of time only is required to make it the common property of his particular class.

As to the degree of responsibility under this system, which has been objected to, it is manifestly very great; and its demands are rigidly enforced. A boy can not go to this school unprepared for his exercise without the knowledge of the principal: the deportment of that gentleman towards the scholars being at once dignified and respectful, produces in them the corresponding fruits of respect and attention to duty. No industrious boy can be overlooked; his claims to distinction are recorded in the daily and weekly reports: he knows, that to take rank of his monitor, it is only necessary to excel. The rule of challenging for places, therefore inculcates, by a natural line of distinction, an industrious spirit, which may reign over the longest periods of after life; a spirit which, while it grounds him in the *elements* of knowledge, lays to them the broad bases of virtue and happiness.

Finally, the committee represent to the board as a reason why it should spare no pains to foster and patronise the high school—its cheapness—talents in learned professions and pursuits ought to be liberally rewarded; we would not, therefore, be supposed to recommend any system in place of instruction, merely on account of its cheapness. In the present case, owing to the comprehensive and prudent nature of the plan, we find combined with liberal compensation for superior talents and devotedness, the most moderate charges. For the very small sum of $28 per annum, pupils may be taught six languages, together with the various other branches of knowledge that are required to fit them either to enter the colleges advantageously, or engage at once in the active duties and callings of life. The man in moderate circumstances, therefore, who wishes to place his son on a footing, in respect of moral and intellectual worth, with the offspring of his wealthier fellow citizen, finds in this truly republican institution every facility for the gratification of so laudable an ambition. Such in fact is the design and operation of the High School of the Franklin Institute.

All which is respectfully submitted.

(Signed.)

A. G. Ralston,
J. B. Garrigues,
George Fox,
Henry Horn,
C. C. Biddle,
J. R. Mitchell,
R. E. Griffith,
Charles Wheeler,
C. D. Meigs.

March 12, 1828.

ANNALS OF PHILADELPHIA.

From the recovered minutes of the Common Council, from 1704 to 1776; extracted for the Pennsylvania Gazette.

[*Continued.*]

Evan Owen and John Cadwallader are appointed to Imploy workmen to fill up the old well at the Centre, Also to speak to Jas. Posturns to Remove the old Pump and fill up the old well at the end of Jones's alley.

26 June, 1727.—The persons appointed to get the stack of chimneys in the house formerly Thomas Emley's. pulled down, now report that the second stack of chimneys are pulled down.

17 Aug, 1727.—Alderman Hill, alderman Plumstead, and Anthony Morris, are desired to view the bridge over the Dock at the south end of Front street, and to calculate the charge of putting the same into good order, and to calculate the charge of putting the same into good order, and make report to next council; and in the mean time to get subscription towards the doing thereof.

25 Sept. 1727.—C. Read, Mayor.

William Chancellor applying to this Board for the sum of thirteen pounds ten shillings, due to him for making the flag Presented to the Gov'r by this Corporation, the Mayor is desired to pay him for the same out of the Moneys in his hands belonging to the Corporation.

6 Feby. 1728. T. Lawrence, Mayor.

A motion being made that a flag staff should be Erected on Society Hill,* the old one being rotten and taken down, and there being a necessity for ye same to be done immediately, Ordered, that one be provided upon this emergencie at the charge of the Corporation.

22 March 1728.

Richard Armitt Represented to this Board that many Hucksters in this City buying provisions in the Market, & often meet the people coming to Markett at the ends of the Street, and then buy up provisions, which might be prevented by appointing an Hour both Winter & Summer, for the Ringing the Bell. The Board took the same into consideration, & order that Ordinance of this city should be forthwith put into execution & published for suppressing the sd practice.

16 May 1728.

The Board having heard that a lottery was Intended to be Erected by Samuel Keimer in this city, during this present Fair, he having sett forth several printed papers for that purpose, the Board sent for the said Keimer, who came & having heard what he had to say in behalf of the said Lottery. Ordered that no Lottery be kept during the said fair.

7 Oct. 1729. The Keeping of a Tavern in the Prison being under the Consideration of this Board, they are of opinion that the same is a great Nuisance and ought to ——

* Society Hill was the eastern part of what is now called Southwark.

be suppressed & that the Removal thereof be Recommended to the Magistracy.

5 Jany. 1729. The Board having now resumed the Consideration of Building a Number of Market Stalls for the accommodation of such as bring Provisions from the Jerseys as well as our own Inhabitants, having occasion to buy, It is agreed by a Majority of this Board, that Twenty Stalls shall be erected between the Court House & the River, to begin One hundred ffeet eastward from the steps of the Court house.

16 Sep. 1730.—Thomas Griffiths Mayor.

It is ordered by this Board that the Vendue Master for the time being do not sell any goods at Vendue under the value of ffifty shillings in one Lot Except wearing apparel or second hand goods & except as in the Law for regulating Vendues is Excepted.

28 Sep. 1730.—Patric Baird the Vendue Master now attended this Board to agree with them for the rent of his standing in the north west corner of the Court house to Vendue goods. And he now agrees to pay the sum of Eight pounds per an. in ffour quarterly payments.

THE AUDITORS REPORT,

That the Commissioners assessed a tax of one hundred and twenty thousand nine hundred eighty-two dollars and forty-three cents, to meet the expenditures of the year 1827. The assessment for the County Tax upon the several districts of the county, results as follows:

City of Philadelphia	$71,391 75
Northern Liberties, incorporated	11,886 93
Northern Liberties, unincorporated	2,642 14
Kensington, East and West	3,360 40
Penn Township	7,374 88
Southwark, East and West	6,657 96
Moyamensing	2,072 37
Passyunk	1,813 74
Kingsessing	1,205 40
Blockley	2,903 05
Roxborough	1,484 75
Germantown	2,562 56
Bristol	1,156 35
Oxford	1,681 35
Lower Dublin	1,621 19
Byberry	774 05
Moreland	393 56
Total	120,982 43

PARDON OF OFFENDERS.

Pardons granted by the Governors of Pennsylvania, from the second Tuesday of December 1799, to the 19th of May 1819.

By Governor M'Kean.

In 1799.	From 2d Tuesday in Dec. to 31st inclusive		4
1800	1st Jan. to 31st Dec.	do.	140
1801	do	do	66
1802	do	do	67
1803	do	do	185
1804	do	do	140
1805	do	do	152
1806	do	do	129
1807	do	do	114
1808	do to 2d Tuesday of Dec.		174
			1180

By Governor Snyder.

In 1808.	From 2d Tuesday in Dec. to 31st inclusive		2
1809	1st Jan. to 31st Dec.	do	125
1810	do	do	104
1811	do	do	130
1812	do	do	111
1813	do	do	68
1814	do	do	86
1815	do	do	99
1816	do	do	145
1817	do to 2d Tuesday of Dec.		146
			1016

By Governor Findlay.

In 1817.	From 2d Tuesday in Dec. to 31st inclusive		9
1818	1st Jan. to 31st Dec.	do.	150
1819	do to 19th May	do	49
			208

FALL OF RAIN.

An account of the water that fell in Rain and snow, in Lancaster, Pa. from 1812 to 1819 inclusive, and the number of days, in each year, in which there was falling weather.

Years.	*Inches.*	*Days.*	*Months.*	1819. *Inches.*	*Days*
1812	33 4-8ths,	69	January	0 1-8	1
1813	40 1-8	75	February	2 5-8	6
1814	52 2-8	74	March	3 6-8	8
1815	37 7-8	57	April	2 1-8	5
1816	30 7-8	70	May	3 1-8	8
1817	40 9-8	70	June	1	4
1818	36 4-8	68	July	4 9-8	9
			August	8 3-8	11
			September	1 4-8	4
			October	1	2
			Novembe	1 2-8	3
			December	2 2-8	5
				31 4-8	66

The following is a correct statement of the bequests made by the late John Grandom, of Philadelphia to Public Institutions :—

To the Orphans' Asylum,		$5,000
Widows' Asylum,		5,000
Friends' Asylum for Insane Persons,		5,000
Deaf and Dumb Institutions,		5,000
Pennsylvania Hospital,		3,000
Philadelphia Dispensary, per an.	$80 00	ground rents.
Southern Dispensary,	111 10	ground rents.
Northern Dispensary,	120 00	ground rents.
Apprentices' Library,	75 00	ground rents.

Of the residue of his estate he bequeathed the principal parts to such of his relations as he thought stood in need of an increase of fortune. To some of his tenants he made liberal bequests.

Board of Health.—The following gentlemen were on Monday elected members of the Board of Health for the ensuing year: viz.

By the Select and Common Councils.

Cornelius Comegys,	Capt. E. Wallington,
James Kitchen	Chas. Lukens, M. D.
Robert E. Griffith,	Saml. J. Robins.

By the Commissioners of Spring Garden—Charles Souder.

By the Commissioners of Kensington—John Harrison, Esq.

By the Commissioners of Southward—Dr. Jesse R. Burden.

By the Commissioners of Moyamensing—R. L. Loughead, Esq.

The Select and Common Councils, on Thursday evening, decided to erect a Steeple on the State House, agreeably to Mr. Strickland's plan, and appropriated for that purpose, and purchase of a Clock & Bell, $12,000.

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